

IN THE CLAIMS:

What is claimed is:

1. A cardiopulmonary bypass filter system comprising:
 - a housing having distal and proximal ends, the proximal end
 - comprising a connector adapted to connect to at least one hose and the
 - distal end comprising a distal member having first and second openings,
 - wherein the housing comprises a first lumen adapted to be in fluid
 - communication with the at least one hose and one of the first and
 - second openings and a second lumen extending from a port to the other
 - of the first and second openings in the housing distal member; and
 - a vascular filter system comprising a collapsible filter advancable
 - through the housing port, said vascular filter system comprising (a) a
 - filter membrane support structure, and (b) a filter membrane attached to
 - said filter membrane support structure, said filter membrane having
 - openings, wherein said openings have variable diameters, and wherein
 - the diameter of said openings range from about 20 to about 300
 - microns.
2. The filter system of claim 1, wherein the housing is adapted to be
- connected to a cardiopulmonary bypass machine.
3. The filter system of claim 1, wherein said housing has a distal flange.
4. The filter system of claim 3, wherein said flange is rigid or flexible.

5. The filter system of claim 1, wherein said two lumens form a substantially V-shape.
6. The filter system of claim 1, wherein said housing distal member is capable of extending into a blood vessel.
7. The filter system of claim 1 wherein said openings are non-uniformly spaced.
8. The filter system of claim 1 wherein said openings comprise fibers attached to said openings to increase embolic capture.